Workplace Technologies for People with Disabilities

TECH Connect

A Program of the
Illinois Assistive Technology Project

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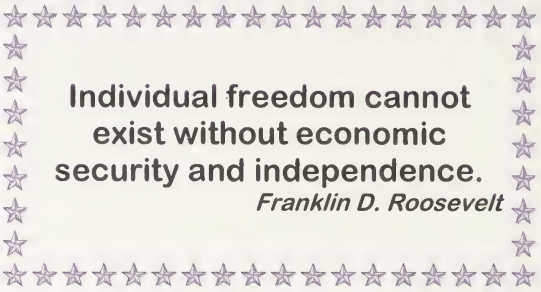

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Dear Colleague:

On behalf of the Illinois Department of Human Services, Office of Rehabilitation Services (ORS), I am pleased to share this excellent resource manual with you. I would also like to express my appreciation to the Illinois Assistive Technology Project (IATP) staff for their hard work in compiling such a comprehensive, "user friendly" manual. As you review this information, you will see how assistive technology can make all the difference in the lives of people with disabilities, helping them succeed at work and also perform basic daily living activities at home.

As the lead state agency for providing services to individuals with disabilities, ORS collaborates with IATP and numerous partners to help people with disabilities achieve their goals in the areas of employment, education, and independent living. Working together, ORS, IATP, and other consortium partners are implementing the ***Access to Employment Network***, a statewide initiative funded by the U.S. Department of Labor that will facilitate a fully accessible One-Stop system to support employment and job advancement for people with disabilities. While assistive technology is only one component of this initiative, it plays a critical role in helping people with disabilities reach their full potential.

I hope that this manual is helpful to you. If you have questions or need more information about assistive technology, please feel free to contact the Illinois Assistive Technology Project at **1-800/852-5110 (V/TTY).**

Sincerely,

Robert F. Kilbury, Rh.D.
Associate Director
Office of Rehabilitation Services

Acknowledgments

James Mueller's book, *The Workplace Workbook, An Illustrated Guide to Job Accommodations and Assistive Technology*, published by the Dole Foundation in 1990, was the major inspiration for many of the ideas in this document. The sections titled, *More Ideas . . .* are summaries of the ideas in his book.

We must also thank The Interagency Program for Assistive Technology in North Dakota (IPAT). Their publication, *Solutions: Assistive Technology for People with Hidden Disabilities*, also inspired many ideas we incorporated into this book.

The Job Accommodation Network (JAN) is a constant source of good information about making job accommodations for people with disabilities. Their 10-step process reprinted in this book will be a helpful guide to all who use it.

About the Illinois Assistive Technology Project (IATP)

It is IATP's job to help people with disabilities get the technology that will help them increase, maintain or improve their skills. IATP is consumer controlled and operated. IATP offers:

- TechConnect Demonstration & Loan Center
- Information & Assistance
- Training
- TechNotes & TECHTALK
- Online Information

IATP receives funds from the National Institute on Disability and Rehabilitation Research and the Illinois Department of Human Services, Office of Rehabilitation Services.

Call IATP for more information about workplace technologies for people with disabilities.

Pronouns

This book uses the feminine pronoun "she" and its variants. We do it solely for the ease of the reader.

Disclaimer

Neither IATP, or its funding sources, endorse any specific product. Technologies highlighted in this book are merely examples.

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People with Disabilities Want to Work

Finding and keeping qualified workers in this economy is often the most challenging part of running a business. Yet, employers often overlook a large segment of our qualified workforce. . . people with disabilities. A Lou Harris [1] survey, found that:

- 98% believe that everyone, including people with disabilities, should have an equal opportunity to participate in American society;
- 90% said society benefits from having people with disabilities become more productive rather than dependent upon public financial assistance;
- 82% see putting people with disabilities to work as a good thing rather than a threat.

Based on the 1998 First Report of the Presidential Task Force on Employment of People with Disabilities, seven out of ten unemployed people with disabilities would prefer to work. Illinois estimates that more than 342,000 unemployed working age citizens with disabilities want to work.

People with disabilities are as capable and dependable as those without them. Yet, they continue to be passed by. Why?

One main reason is the myth that hiring a person who has disabilities means costly accommodations.[2] It's fundamentally untrue. Most accommodations are easy to implement and cost very little.

About this Book

This book is filled with ideas about how employers can increase their work pool by accommodating the 7.8 million* working-age adults with disabilities. It's intended for people with disabilities, employers, employment specialists, case workers, advocates or anyone interested in improving employment opportunities for people with disabilities.

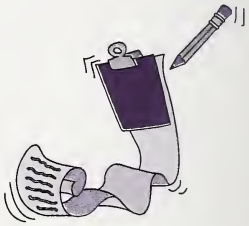
Two hundred years ago Charles Dickens wrote, "Change begets change." That's even more true today. The great technology boon of the past two decades changed the way all businesses operate. That same change created opportunities for people with disabilities to be-

come part of the workforce . . .some, for the very first time.

With this new technology (often called assistive technology) people with disabilities can excel in jobs that were previously closed to them. They can become wage earners and active members of their communities.
Education Kit, 2000. President's Committee on Employment of People with Disabilities

What is Assistive Technology?

It's anything that helps someone do something. All technology is assistive. It can be something designed for everyone, like a grocery cart; specifically designed for a segment of the population, like a plumber's adjustable wrench; or, uniquely designed for a specific person, like prescription eye glasses. However, the term is most often used to describe devices that help people with disabilities be more independent at work, school, home and any other place they happen to find themselves.



It's estimated that there are over 18,000 specific technologies that can help someone with a disability be more independent.

Since technology is ANYTHING that can help a person do something, it is impossible to come up with a list. It can be as low tech as Velcro or as high tech as a computer system that *speaks* for a person who is not easily understood. That broad definition can be frustrating for people who are new to the field, or don't encounter people with disabilities often in their work or social life. That's why we've published this guide.

The examples in this book represent a small percentage of workplace technologies available today. We highlighted examples of low, medium, and high technology solutions. But remember: there are probably five to ten more devices that are similar, as well as other ways to do a particular job.

How Do I Make a Job Accessible?

The Job Accommodation Network (JAN) offers these steps to employers who make job accommodations. [4]

Step 1: Define the problem .

Step 2: Is it possible to modify the job? Yes?

Step 3: Is it possible to modify the existing facility? Yes?

Step 4: Does a product or service exist that would solve the prob-

Step 5: Can you use or combine available products in a way not

Step 6: Is it possible to modify a product? Yes? Modify the prod-

Step 7: Is it possible to design a new product? Yes? Design the

Step 8: Are there alternative placement possibilities? Yes? Re-

Step 9: Redefine the situation.

Step 10: Maintain accommodations.

How Can I Know What's Right?

The simple answer is, if it works. Suppose you hire an employee who uses a wheelchair. You know that your building is physically accessible with entrance doors, interior doors, bathrooms, parking lots and elevators meeting all the current codes. Everything seems to be right. However, on your new employee's first day, you learn she cannot get her wheelchair far enough under the desk to use it. There seem to be two obstructions:

1. The desk is too low.
2. The wheelchair's footrests bang on the privacy panel in the front of the desk that prevents her from getting as far under the desk as she needs to be.

There are several options available to you. You can:

A. Raise the desk with bricks or blocks on each corner, and cut a half-moon in the front modesty panel to accommodate the wheelchair's footrests.
B. Use a height adjustable table that has telescoping legs that can be set at one height. To change the height, you must lay the desk on its side. Use accessible files and portable drawers to add needed storage space.
C. Use an adjustable desk without a modesty panel. A user can raise and lower the desk using a hand crank.
D. Use a new electric adjustable desk without a modesty panel. The user pushes a button to raise and lower the desk.

Is one solution better than any of the others? That's a decision you and the employee must make.

You may also want to have someone come in and assess the work environment and make suggestions about how to make it work for your new employee.

Exploring all the Options

When you are trying to solve this kind of technology problem, always consider the least intrusive, most cost-effective solution first. If that won't work. move up to something a little higher tech. As the steps above indicate, look for a no-tech type of solution first, before considering a device. No single solution works in all situations, even if the accommodation is for people with the same disability.

Successful artist, Dan Keplinger uses a head-stick to paint, one of its many uses.

In our example, explore "A" first. If that doesn't work, then maybe "B" might. If that doesn't work, try "C" and so on. Ask your new employee to explore the strengths and weaknesses of each option. Together you can find the best option to use.

Focus on the Task

Don't get bogged down by a disability. Focus on what a person needs to do and then search for tools that will help her do it. For

example, you might think that a person that cannot move her arms could not operate a computer.

In fact, there are many low tech ways that someone with that particular disability can operate a computer. Often, all the person needs is a head stick and key guard. But if that doesn't work, there are still low cost ways to make a computer accessible to someone with upper body disabilities.

Unfortunately, there's a long history of trying to *fix the person* rather than this newer way of looking at the environment and tasks. If you need help getting out of that old way of thinking, you may need an outside evaluator to help you.

Talk to Some Experts

The first person to ask about what might work best is the person with the disability. She has had to figure out, often cleverly, ways to live in a world that doesn't fit her. If the two of you cannot solve the puzzle, invite another person to help. Pick someone who is "good with her hands." Perhaps a carpenter, a farmer, or engineer. Pick someone that works in a completely different environment than you. They problem solve differently, and will add new insights.

Once you've exhausted your idea pool... you'll need to call in a professional in the technology field to help. IATP/TechConnect maintains a list of people in Illinois who conduct assistive technology evaluations. Call, or visit our web site.

Universal Design

Universal design is both a vision and a concrete attempt to plan and make all buildings, environments and products usable for everyone. . . children and older adults, people of different sizes and abilities, disabled and nondisabled.

There are seven guiding principles in universal design:

- Equitable use
- Flexibility in use
- Simple and intuitive use
- Perceptible information
- Tolerance for error
- Low physical effort
- Size and space for approach and use

A key guard prevents pressing more than one key at a time.

Consider ramps. Governmental agencies, businesses and other organizations installed ramps to create access for people with disabilities. However, it's proven to be a tremendous asset for parents with strollers, the copy machine salesman who has to lug a machine in and out of offices and nearly every delivery man and woman on earth. Most of us given the option of stairs or a ramp, choose the ramp. Good universal design works for everyone!

The Americans with Disability Act (ADA)

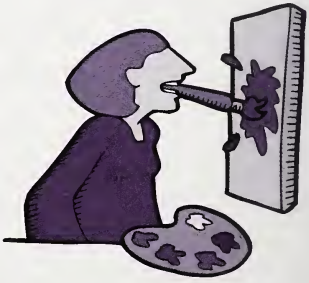
The ADA prohibits discrimination on the basis of disability in employment, state and local government, public places, commercial facilities, transportation, and telecommunications.

Title I of the ADA requires employers (with 15 or more employees) to give qualified people with disabilities equal access to the full range of employment-related opportunities.

For example, it bans discrimination in recruitment, hiring, promotions, training, pay, social activities, and other privileges of employment. It also requires employers to make reasonable accommodations to the known limitations of otherwise qualified individuals with disabilities, unless it results in undue hardship.

Below is a list of agencies that can help you understand and comply with the ADA.

Disability & Business Technical Assistance Center
UIC/Disability and Human Development
1640 West Roosevelt Road (M/C 626)
Chicago, Illinois 60608
800-949-4232 v/tty, 312-413-1407 v/tty,
312-413-1856 fax
www.gldbtac.org
gldbtac@uic.edu



Centers for Independent Living (CILs)
CILs are centers that provide peer relationships to people with disabilities by people with disabilities. There are 24 centers in Illinois. For the name of the CIL nearest you, call the Illinois Network of Centers for Independent Living at 800-587-1227.

Job Accommodation Network
West Virginia University
PO Box 6080
Morgantown, WV 26506-6080
800-526-7234 v/tty
www.janweb.icdi.wvu.edu

US Department of Justice, ADA Information Line
800-514-0301 v, 800-514-0383 tty

Tax Incentives for Businesses

Internal Revenue offers three tax incentives to help employers cover the cost of accommodations for employees with disabilities and to make their places of business accessible for employees and/or customers with disabilities. They are:

- Small business tax credit
- Architectural / Transportation tax credit
- Work opportunity tax credit (WOTC)

Small Business Tax Credit

IRS Code Section 44, Disabled Access Credit, Form 8826 -This annual tax credit is for making businesses accessible to people with disabilities. To be eligible, a small business can earn a maximum of one million dollars in revenue or have 30 or fewer full-time employees. The maximum benefit is $5,000, half of the actual expenditure.

Allowable expenses include sign language interpreters; readers; adaptive or modified equipment; architectural barrier removal in buildings or vehicles; making your print materials in alternate formats (Braille, audio tape, large print); and many more. The credit does not apply to new construction or on a building constructed and used before Nov. 5, 1990.

Architectural/Transportation Tax Deduction

IRS Code Section 190, Barrier Removal - If you remove physical, structural, and transportation barriers for people with disabilities at work, you may take this deduction. All businesses are eligible.

The deduction covers up to $15,000 a year barrier removal. You can annually depreciate any amounts over the $15,000. The deduction is available every year. Allowable deductions cover accessible parking spaces, ramps, curb cuts, telephones, water fountains, restrooms, and making walkways at least 48 inches wide.

You can't use it for new construction, or a complete renovation, or for the normal replacement of depreciable property. Small businesses may use the credit and deduction together, if they qualify under both, with some restrictions.

Work Opportunity Tax Credit (WOTC)

This credit replaces the Targeted Jobs Tax Credit (TJTC). It's a tax credit for employers who hire certain low-income groups. Employers that hire people who receive SSI or are certified vocational rehabilitation (VR) referrals who meet certain criteria may claim the WOTC.

Employers may take a tax credit up to 40 percent of the first $6,000, or up to $2,400 in wages paid during the first 12 months for each new hire, with some restrictions. There is also a partial credit for less hours.

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1 Hopkins. K.R. (1991). Willing to act. [Summary of Louis Harris and Associates survey findings on public attitudes toward people with disabilities].

2 In this document, accommodate means to provide parity, equality on the job. Employees with disabilities can do the same job as non-disabled colleagues, with the right tools. Those tools level the playing field and create a sameness of quantity or degree.

3 Facts about Job Accommodations, Job Accommodation Network. http://www.jan.wvu.edu/

4 From President's Committee on Employment of People With Disabilities pamphlet, Job Accommodations Come in Groups of One. http://www50.pcepd.gov/pcepd/pubs/fact/groupof1.htm

Section Two
Survey of Devices

Reminder:
The devices you see
here are merely examples,
not recommendations.
There's lots more where these came from.

Notes

Recordings for the Blind

Anyone with a disability that limits her ability to read standard print is eligible to be a member of Recordings for the Blind and Dyslexic (RFB&D). That includes people with visual, learning or physical disabilities.

Members have access to a library of more than 83,000 titles. They also have the ability to request the recording of a book not in their collection, such as training manuals, policy and procedures or other in-house materials. Free membership for qualified applicants.

Talking Calculator

This calculator not only displays the calculations, it also speaks as the operator presses the various buttons. $10.00 & Up.

ZOOMTEXT

This IBM compatible software program magnifies on-screen text to help people with visual disabilities use computers' It magnifies everything on the screen. This results in enlarged characters, icons and the cursor. $400/800.00.

Closed Circuit Television

This color magnifier unit hooks up to a regular television set. It can help people who are legally, but not totally, blind. People who can read the headlines but not the fine print of a newspaper could benefit from this device. $300/800.00.

Magnifiers

Magnifiers come in all shapes, sizes and prices. They can magnify from 1 to 14x. They can be lighted, handheld, table top, mounted, worn around the neck, eyeglass shaped, etc. Prices vary widely.

Adapted Rulers

12" plastic ruler will help you measure accurately. Oversized, bold numbers and lines. Available with white letters on a black background, or black letters on a white background. $2.00

Screen Magnifier

Computer screen magnifiers make the computer screen larger, sharper and clearer. Screen magnifiers can also filter out U.V. rays, protecting eyes. Position adjusts to increase and decrease magnification. $50.00.

Braille Note taker

These small, portable devices have Braille keyboards for entering information. They use a speech synthesizer or Braille display for output. The user enters the information on the keyboard. They have the option of transferring it to a larger computer with more memory, reviewing it using the built-in speech synthesizer or Braille display, or printing it on a Braille or ink print printer. $1000/3000.00 & even more depending on features.

Personal Electronic Navigation Aids

These aids use ultrasonic technology to detect objects within four, eight or sixteen feet. When an obstacle is within range, the device either vibrates or emits a sound. Other controls include the range switch and the power switch. The unit allows the user to choose between hand-held and chest-mounted positions. $800/1000.00.

Headlamps

These adjustable beams point light where it's needed, leaving hands free for other tasks. Headlights focus intense light right on the area where the user works. $30/50.00.

Screen Readers

Screen readers convert screen information into speech. This software tool enables blind or visually-impaired individuals to operate a computer. Screen readers can benefit many others as well, including people who have a reading dysfunction or who cannot read text on a computer screen. Jaws is one brand of screen reader. $800/1200.00.

Clock with Large Numbers

People with low vision may not be able to see a wall clock. Placing a clock with large numbers close to the worker will help them keep track of time. Try LCD readouts and traditional round dial clocks to find out which type of clock is easier for the worker. $20.00/100.00.

Braille Labeler

If all the items in a storage area, or bookcase have Braille labels, people who are blind or have low-vision can find the items they need. $60.00.

Large Print Stickers for Keyboard

In most cases you don't need to purchase a new keyboard for someone who has low-vision. These large print stickers fit over each key, making them easier to read. $27.00.

More ideas for making jobs accessible for people with vision disabilities.

- Improve contrast between doors and walls, tables and chairs, etc.
- Avoid reorganizing physical layout and storage areas.
- Provide raised edge to keep materials from falling.
- Use big button phones.
- Add large letters or Brailled keys on keyboard.
- Install "home key" indicators on keyboard.
- Add tactile & color strips where floor surface changes.
- Label with large print & Braille.
- Use auditory output clocks, calculators, measuring instruments.
- Provide space for assistive sensory equipment.
- Purchase telephone auto-dialer with tactile markings.
- Use voice mail.
- Provide a tactile map of work area, cafeteria, storage, etc.
- Provide optical character recognition systems.
- Increase illumination/visibility.
- Use opaque projector to enlarge images.
- Shield unnecessary keys.
- Use photo copiers that have an enlargement feature.

Loud Phone Ringer

A loud phone ringer amplifies the sound the telephone makes for incoming calls. $40/60.00.

Assistive Listening Devices

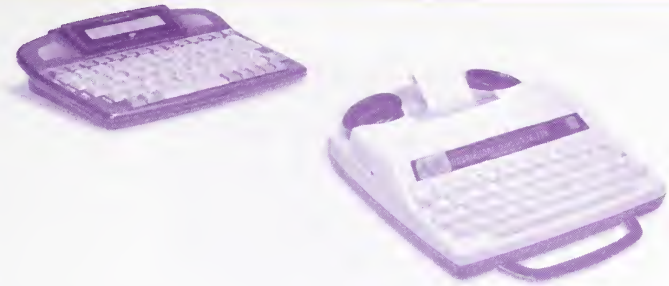
Assistive listening devices (ALDs) are any non-hearing aid device designed to improve a hearing-impaired person's ability to communicate and to function. ALDs improve a person's ability to hear what is important and minimize amplification of background noise. ALDs can be used alone or in combination with hearing aids or cochlear implants. Prices range from $20.00 for personal pocket talkers to over $1000 for multi-user FM systems.

Portable Phone Amplifier

This gives a user access to a pay phones, hotel phones, etc. Amplifies up to ten times normal volume. Adjustable volume control also enhances volume and clarity making voices easier to understand. Hearing aid compatible. $40.00 .

Blinker Buddy

The Blinker Buddy reminds someone who is deaf or hard of hearing that their directional signal is on. The unit flashes a light and emits a sound to alert a driver when directional signal is blinking. $100.00.



Text Telephones TTY

A TTY is a typewriter-style device that allows a deaf or hard-of-hearing person and/or with speech-impairment to make telephone contact directly without using another person to interpret. Both people must use a TTY, and conversations, rather than being spoken, are typed from one machine to another. The conversation is displayed on a visual screen and/or paper printout. A person using a TTY may call a person with a standard telephone by placing the call through the Illinois Relay Center. To reach the relay center, dial 711. $250/700.00.

Door Alarm

Door alarms are activated by vibration. They respond to knocks by flashing an extra bright light that lasts for several seconds. They are usually very easy to install and are battery operated. $30/80.00.

Strobe Smoke Detector

The strobe light alerts people who can't hear audible alarms. The strobe light flashes approximately 60 times per minute. Some can be interconnected with other units. Some must be hard wired, others are battery operated. $20/300.00.

Phone Alarm

A phone alarm is automatically set for a telephone ring. It directly connects to the telephone and a lamp. When the phone rings, the lamp flashes on and off. $60.00.

Vibrating Pagers

Vibrating pagers can be used in a work setting instead of a telephone. With an alpha & numeric pager, an employer can give assignments, call the person, leave phone messages, etc. Prices vary depending on contract.

Open or Closed Captioning

Captioning lets people with hearing impairments see the text rather than hearing it. CLOSED captions are captions that are hidden in the video signal, invisible without a special decoder. OPEN captions are captions that have been decoded, and appear like subtitles in a movie. In other words, open captions cannot be turned off. Make sure all training videos and visual presentations have captions or print out a text version of the spoken words.

Amplified Handset

This handset amplifies and blocks out background noise. It improves hearing over bad phone lines or low volume calls. It has finger-tip volume control and increases volume up to three times above normal listening levels. It's easier to hear on both sides of the conversation. $70.00

Vibrating Reminder/Oversized Watch/Text Messenger

A reminder device vibrates like a pager and can be worn on your belt or wrist. It is programmed as a medication reminder for home health care patients and the elderly. The device is also beneficial to patients with impaired hearing, Alzheimer's disease and other patients with memory dysfunction. $80.00.

Conference Microphone

In any classroom, meeting, conference, or assembly room, it can help the hearing-impaired listener hear more clearly. It can be placed on a table to pick up the speaker's voice within 15 foot radius. The clear signal is then transmitted to the listener. $100.00 & up.

Amplified Telephone

This amplified phone provides clear sound and many amplified phones also have large push buttons. It improves the listener's understanding by boosting high frequencies and is hearing-aid compatible. $50.00 & up.

More ideas for making a workplace accessible for people who are deaf or hard of hearing.

- Have amplifier headset, bone conduction and/or hearing aid compatible receivers.
- Provide visual indicators for doors.
- Use email or online meetings.
- Insulate equipment noise with baffles or relocate them.
- Minimize the need for verbal help through clear written instructions.
- Offer sign language classes to coworkers and others.
- Provide a swivel chair for face-to-face communication
- Avoid secluded areas.
- Provide adequate lighting to optimize lip-reading.

Door Knob Extension

A door knob extender can convert any knob into a lever opening. Lets people with poor grasp or an armload of materials pass through the doorway unassisted. $10/25.00.

Table Top Scissors

Push down table-top scissors have two "T" shaped pads and are operated either by depressing the handle with the scissor in a stable position or by "scooting" it across the table. $25.00.

Writing Aid

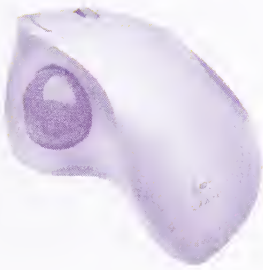
Writing aids help people with difficult grasp hold a pen or pencil. A tennis ball with a pen stuck through it can sometimes work. The Writing Bird pictured above is only one of many styles of devices available on the market. It works well for people who have low muscle tone. $20.00.

Key Turner

Large grasping surface on this key holder, makes is much easier to use. $5/10.00.

Wireless Remote Controls

Wireless remotes let people activate any appliance or lamp that plugs into a standard wall socket. If it's used on a lamp you can even dim or brighten a lamp. And, there's no need to modify a work setting's electrical system. Starts around $20.00

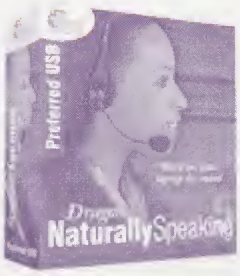


Track Ball

An ergonomic trackball replaces a traditional mouse. It lets users access the computer by moving the ball with a thumb or forefinger. $20/100.

Book Holder

A book holder can put a document at the right eye height and frees up a person's hands. It can adjust to any height and angle. $20.00 & Up



Voice Recognition

The user speaks to their computer naturally without pausing between words. As they speak, their sentences appear on the screen. It is useful for people who cannot type, who have learning disabilities and more. $200/700.00.

Head Mouse

The Head Mouse replaces a standard computer mouse. People who cannot use their hands may find this device very helpful. It translates head movements into directly proportional movements of the cursor. It's wireless optical sensor tracks a target on the user's forehead or glasses. When combined with an on-screen keyboard, a head mouse can completely replace the functions of a conventional keyboard. $1000/2000.

Head Master

The head master operates with a puff switch mounted on a headset. The control unit sits on top of the computer's monitor. It emits an ultrasound signal and it is picked up by the three sensors mounted on the headset. The Head Master determines the position of the users head and moves the mouse cursor accordingly. $1000.00

Jouse

Jouse is a joystick-operated mouse. Users control it with their mouth. Move the joystick and the cursor moves. The farther you move the joystick, the faster the cursor moves. A sip or puff into the tube replaces a mouse click. $2200.00.

Big Keys

The large keys and 'abc' lay-out help users explore letters and words without confusion. The simplified key-set avoids ambiguity and deflects interference with the computer. This may be ideal for people with dyslexia and related learning difficulties. Also comes in QWERTY keyboard. $160.00.

Little Fingers Keyboard

This keyboard is a full 101 keys, but it's much smaller to fit small hands or people with limited range of motion. $100.00.

Touch Window

Simply point and touch. Now you have computer access at the touch of a finger. The see-through surface lets you watch as the computer responds. The touch window attaches easily to your computer with Velcro, so if you choose not to use it, you can easily remove it. Very easy to install. $200/400.00.

More ideas for making jobs accessible for people with manipulation and fine motor disabilities.

- Minimize manipulation - store data on hard drives not floppies.
- Provide a key guard.
- Stabilize keyboard and place at convenient height.
- Minimize document handling.
- Provide a lazy susan carousel within easy reach.
- Use powered equipment where possible. e.g., staplers, letter openers, screwdrivers.
- Raise the edge around work area to prevent items from rolling off.
- Avoid the need to twist.
- Store items in open desktop storage.
- Build up door handles or make loop handles out of Velcro.
- Build up tools with grip tape, foam tubing or bicycle handle grips.
- Minimize writing strain with hard, felt-tip pens on smooth paper.
- Facilitate sliding rather than lifting items.

Adjustable Foot Rest

A foot rest can optimize body posture, balance and allows the user to move his/her legs and feet to improve circulation. $80.00.

Ready-Made Ramps

Ramps come in all styles and lengths. ADA recommends 1:12 slope ratic. Prices vary depending on length and materials.

Scooters

Battery powered scooters give people with limited mobility access to the entire work complex. $1800 & up.

Hand Rails

Handrails provide support for all people in a workplace. Prices vary widely.

Pneumatic Height Adjustable Chair

These stools let people sit at work places where they usually had to stand. $100/400.00.

Power Strip

Mount a power strip vertically, approximately 12-18 " above the outlet and plug it in. Allows for easy access. $6/20.00.

Height Adjustable Motorized Table

Adjustable tables let people work comfortably and safely at any height. Adjustable tables come in pneumatic, electric and manual controlled. Prices vary widely depending on features.

Pneumatic Lifter Seat

A chair lifter can help someone get to a standing position easily. Can lift up to 80% of a person's weight. Adjustable. $300.00.

Threshold Plates

Threshold plates provide a transition between two areas or between the floor and the sill plate of a door. $5/50.00.

Set Aside Door Hinge

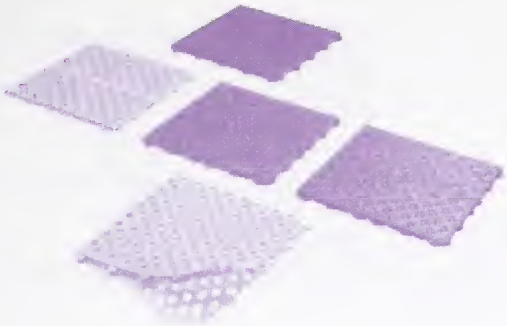
These hinges add 2" to any doorway and make it much easier for a wheelchair to pass through. Uses existing screws and holes. Ideal for narrow bathroom doors. $25.95 set of 2.

Incline Platform Lift

An incline platform wheelchair lift is installed with little to no modification to the stairway. The lift mounts on a load bearing wall on one side of a stairway. The drive system motor can be completely out of sight. These units are both indoor and outdoor compatible. $3000 & up.

Walking Aid

This ambulation device is a folding walker/chair combination allowing the user to walk and then sit down when tired. The steel frame is bottom weighted to prevent tipping. The Merry Walker (pictured above) folds for transport and storage. Comes in five height sizes, extra small, small, medium, large, and extra large. $500.00.



Safety Mats

There are safety mats for nearly every work environment. . . all of them reduce the chance of slipping. There are also anti-static or anti-fatigue mats; mats for entryways, work areas, garages, yards, stair treads, and more. Prices vary widely.

Wheelchair Work Station

Wheelchair work stations are specially designed for access. Above (on left) is an example of a workstation where the employee's wheelchair moves on tracks to different positions along the desk. On right, a bi-level computer station. Prices vary widely depending on features.

Seat Cushions

Cushions provide for equal distribution of body weight, pressure point relief and cervical alignment. These can give a uniform counter pressure over the entire contact area depending on how it is engineered. $20/400.00.

Swivel Seat Cushion

Anyone with back, leg, or hip disabilities has difficulty getting out of a car. A seat swivel cushion makes that task easier. The soft foam cushion rotates on a base so the user can easily swivel in or out of a car. $30/50.00.

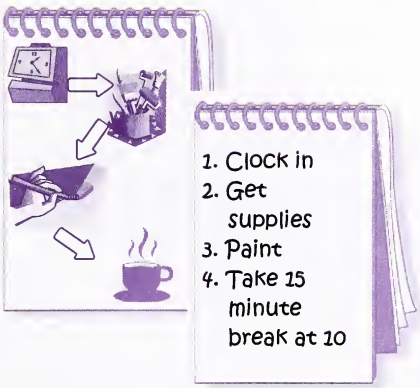
More ideas for making jobs accessible for people with mobility or balance disabilities.

- Provide full armrest and stable back support.
- Offer shoulder bag, backpack or wheeled cart for carrying materials.
- Minimize need for reaching up, behind, or down.
- Avoid two-handed operations when standing.
- Remove all slippery surfaces.
- Provide intercoms in remote areas to avoid the need to walk.
- Offer seating next to phones.
- Organize work area to avoid moving from one place to another to accomplish task.
- Install remote control latches in secure areas.
- Provide space for transfer in and out of wheelchair, if necessary.

Remember, there are more than
18,000 tools designed specifically
for people with disabilities.

Label Maker

Label items in order of use, where things belong, sequential steps or any other type of work task. $20.00 & up.



Make Task Notes

Write down information or create a picture book rather than giving it verbally. Use Post-its, memo pads, email or any other visual medium. Price minimal.

ISAAC

This is an individualized memory minder. It can include task steps, directions to/from places, personal information, reminders, prompts/ cues to be delivered at specified times or under specified conditions and more. $28.00.

Picture Phone

This phone has 9 programmable photo-dial memory buttons. Simply put the picture of the person in a slot and program the number. All the user has to do is push the picture to call the person. $50.00.

Slo-Mo

This free software is downloadable from RJ Cooper (www.rjcooper.com). It slows down computer applications to increase accessibility. It lets the user control the computer's operating speed. The user can slow down a specific application or all of them on the computer.

ULTimate Reader

This software reads text on a computer screen. The user can adjust speed, volume modulation and pitch; alter text display, skim material, jump ahead and take notes (in separate window); highlight text by word, line, chunk, sentence or paragraph with the reading voice on or off. Change font, style, text size or background color. $200.00.

Giant Wall Calendar Clock

An orientation clock keeps the user abreast of the current time and day. It features a clock with display of month, day, date and AM/PM time. The big numbers and letters make it easy to see. $80.00.

Prompting Device

This device holds five recorded messages. A timer activates the messages prompting the user to initiate a task, go to a certain place, etc. The timer plays the recorded messages at just the right time. The five messages can take up to 72 seconds. $50.00.

Prompting Device

This device alerts the user to begin another task. By breaking a job down into its tasks, the user can work more independently with such a device. Pictured is the Five-Talker. $300.00.

911 Terminal Communicator

This devices lets a person who is speech impaired or confused or frightened call for help without saying a word. It tells the 9-1-1 operator where to send help. $52.00.

Text Telephones TTY

A TTY is a typewriter-style device that allows a deaf or hard-of-hearing person and/or with speech-impairment to make telephone contact directly without using another person to interpret. Both people must use a TTY, and conversations, rather than being spoken, are typed from one machine to another. The conversation is displayed on a visual screen and/or paper printout. A person using a TTY may call a person with a standard telephone by placing the call through the Illinois Relay Center. To reach the relay center, dial 711. $250/700.00.

Door Alarm

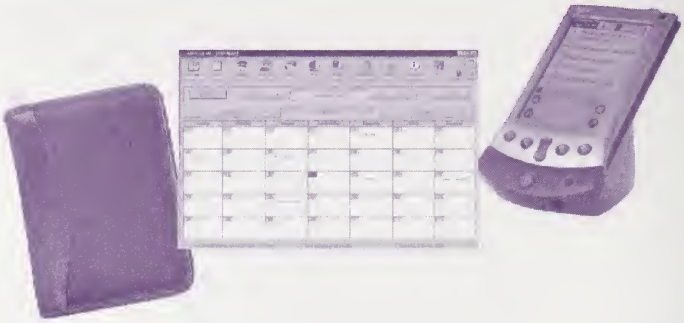
Door alarms are activated by vibration. They respond to knocks by flashing an extra bright light that lasts for several seconds. They are usually very easy to install and are battery operated. $30/80.00.

High Lighters

Color coded activities or assignments can be easier to track. $1.00.

Color Coded Index Cards

Use color coded cards to keep tasks or jobs separated. It helps avoid confusion. $1.00.



Personal Organizers

Electronic organizers can be hand held, PC based, or on paper, depending on the user's need. Personal organizers can keep track of appointments, due dates, calls, expenses, etc. $20.00 & up.

Step-by-Step Communicator

This device records a series of messages. It has up to 75 second message capacity. The first activation of the switch plays the first message, the second activation plays the second recorded message. . . moving "step-by-step" through all the messages. $140.00

Tape Recorder

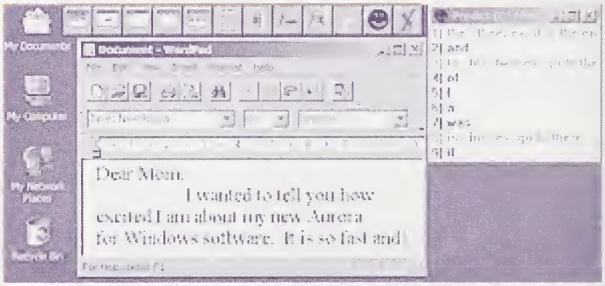
Put resource materials and manuals on tape or CD. It makes them easier to reference for people who have difficulty reading instructions or directions. $20.00 & up.

Quarter Hour Watch

This time aid does not show the actual time like ordinary clocks. Instead it shows the time remaining until an event starts, with each quarter of an hour represented by a circle. The example above shows that there are two quarters of an hour left until it is time to catch the bus. $400.00.

Adapted Personal Organizer

By touching an icon on the screen it will tell the user what comes next . . .a morning routine has a picture of the sun labeled "get ready." The computer plays the voice of whoever programmed the instructions, reminding the user what to do next. $300.00.



Word Prediction

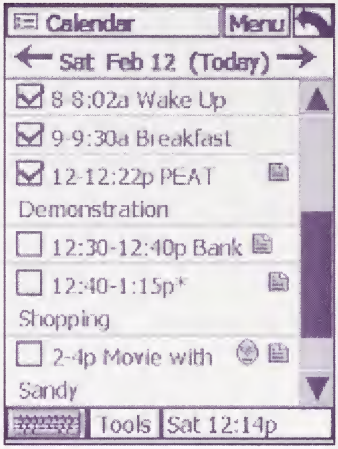
Word prediction is an "intelligent" software that reduces the number of keystrokes necessary for typing. As a user types, the software produces a list of words beginning with the letter selected. When the user types a "t", a list of "t" words appear in the prediction window. When the user next types an "i" next, "ti" words appear, etc. When the right word appears in the prediction window, the user presses its corresponding number that enters the word thus reducing the actual number of keystrokes the person uses. $200/700.00.

Personal Pager

Personal Pagers emit a beep or vibration. A supervisor can use it to remind a person to do a task, move to the next task or to look up at the supervisor. $50.00.

Intellikeys

This versatile keyboard can change its layout to suit any worker's need. It is very light and sits flat or at an angle. The surface can be operated with a finger, foot, head or head-stick. It has QWERTY or ABC layouts, users can also create their own overlays to emphasize their own strengths. Useful for people with upper extremity disabilities or hand tremors. $400.00.



PEAT (Planning & Execution Assistant & Trainer)

PEAT is a software program that turns a handheld computer into a cognitive support system. Helps a person manage her schedule. PEAT cues the user, monitors tasks and can adjust the schedule whenever delays disrupt activities. $600.00 (Pocket computer not included).

Voice Diary

A voice diary is for people who prefer or must use voice rather than text. Voice diary integrates several devices in one: a diary, appointment calendar, message pad, daily to do list, address and telephone list, talking calculator and talking clock. $250.00.

Main Street Messenger

This system lets the user program four daily reminder alerts. At pre-set times, a tone sounds and the reminder key flashes to nudge the user to do whatever is needed; i.e., submit a project, go to an appointment, etc. $450.00.

Home Page Reader

This device provides Web access by speaking Web page information using keystroke navigation. It can speak text, frames, image and text links, alternate text for images and image maps, form elements including JavaScript, graphics descriptions, text in column format, and data input fields. $120.00.

More ideas for making jobs accessible for people with planning, organizational and learning disabilities.

- Post an outline of daily jobs. Use symbols pictures and maps rather than words.
- Arrange materials in the order the users use them.
- Establish clear guidelines.
- Simplify and reduce the number of choices a person needs to make.
- Break tasks into small and clear steps.
- Reduce environmental clutter.
- Teach the task where the person will use it.
- Attach keys to a bungee cord and hook to wrist or belt loop.
- Color code like items.
- Write next day's tasks the night before.
- Audio tape job assignments.
- Have positive progress meetings, log activities and use timetables.
- Establish routines.
- Anticipate crisis and plan to deal with them.
- Schedule more difficult tasks when energy is high.

Light Writer

Turn it on and type. It has two LCD displays so both the sender and the listener can see the text. For anyone with difficulty being understood. Has many styles and features. $3000/6000.00 depending on features.

E-Mail

Email is a fast and easy way to communicate with someone who is hard to understand or doesn't understand complicated verbal responses. Free.

Chat PC

This software replaces the data manager usually found in a handheld computer and replaces it with software that lets the user "speak." $2730.00.

Eye Gaze

A person who uses eye gaze communication fixes her eyes on an icon in front of her. The person she's talking to sees what her eyes fix on through the Plexiglas board. Eye gaze systems are designed specifically for the user and her setting. Prices vary widely, but usually inexpensive.

Communication Book

A user simply points to a picture on a page to indicate her needs. The book can have specific sections for different communication needs (i. e.: on the job, during breaks, expressing emotions, etc.) Costs vary, but tend to be inexpensive.

Polyana

This sophisticated device combines the latest in technology in a light weight device. It has either digitized or synthesized speech. Measures approx. 4" by 6" and weighs 19 oz. in a padded enclosure that holds a high quality amplifier. $1600.00.

Voice Saver

Portable voice savers give a person's voice a little boost. Users can use it in meetings or a classroom, if their voices are soft or weak. $100.00.

Artificial Larynx

This device allows a person without a larynx to speak loud enough for people to hear. It's lightweight and can be worn around the neck. $300/500.00.

Speech Enhancer

This device makes speech clearer and easier to understand. It increases the chances that a person will be understood. $5000/6000.00.

Communication Board

A simple communication board like this lets a user express both simple and very complex thoughts. They are usually covered with Plexiglas so they have a long life. Cost is minimal.

More ideas for making jobs accessible for people with communication disabilities.

- Provide a swivel chair for face-to-face communication.
- Label clearly & simply to minimize need for verbal assistance.
- Minimize ambient noise & vibration.
- Face workstations toward others.
- Add voice synthesis output to word processing.
- Use speech amplifier phone.
- Provide communication boards, notebooks & cards.
- Provide a portable communication device.
- Use TTY for telecommunications with auto-answer & print out.
- Avoid voice-controlled equipment.

Notes

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